Laser Assisted Otoendoscopy

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The authors used laser tympanostomy for creating a bloodless opening through which the endoscope can be introduced. CO₂ laser, mounted on the microscope, in the pulse mode with a focussed beam is used to create a tympanostomy. In the absence of fluid in the middle ear a defocussed beam in the single pulse mode is used to prevent an inadvertent laser hit to the promontory.

Rigid endoscopes of 1.7 mm diameter, 10 cm length, 0o and 30o are used for otendoscopy. A tympanostomy posterior to the malleus allows visualization of entire middle ear space. The medial surface of tympanic membrane, round window and the eustachian tube orifice can be seen with 30o endoscope.

Tympanostomy anterior to the malleus and 30o endoscope allows vision of the depths of the eustachian tube.

Laser assisted otoendoscopy may be used to see oval and round windows in suspected perilymph fistulas, evaluation of middle ear mass, and unexplained conductive hearing loss. In chronic ear disease the surgeon can evaluate the ossicular chain, extent of cholesteatoma, status of tympanic membrane, eustachian tube and middle ear mucosa before surgery.

Round window niche can be cleared off any obstructing mucosal bands prior to chemical perfusion of the inner ear. Otocendoscopy also allows visualization and access to the eustachian tube for insertion of materials in cases of patulous eustachian tube.

This review of the authors revealed that clear rapid visualization of the middle ear structures was accomplished in the office suit with minimal complications and reducing the need for hospitalization.

Reference

1. Herbert Silverstein, Seth . Rosenberg, Johnny Arrude (1997) *Ear Nose and Throat Journal* Vol 76(9), 674-678.